



2600 Bull Street  
Columbia, SC 29201-1708

To: G. Kendall Taylor, P.G., Director  
Division of Hydrogeology  
Bureau of Land and Waste Management

*GKT*

Thru: Jack Gelting, P.G., Manager  
RCRA Hazardous Waste Section  
Division of Hydrogeology  
Bureau of Land and Waste Management

*RG*

From: Cynde Devlin, Hydrogeologist  
RCRA Hazardous Waste Section  
Division of Hydrogeology  
Bureau of Land and Waste Management

*CUD*

Date: July 26, 2007

Re: Gaston Copper Recycling Corporation (GCRC)  
SCD 001 368 075  
Lexington County

Evaluation of the Gaston Copper status under the RCRIS Corrective Action Environmental Indicator Event Codes CA725 and CA750

Please find attached an evaluation of the Environmental Indicator (EI) Event Codes CA 725 (Human Exposures) and CA 750 (Groundwater Releases) for Gaston Copper.

## **I. PURPOSE OF MEMO**

This memo is written to formalize an evaluation of the Gaston Copper site's status in relation to the following corrective action event codes defined in the Resource Conservation and Recovery Information System (RCRIS):

- 1) Human Exposures Controlled Determination (CA725),
- 2) Groundwater Releases Controlled Determination (CA750).

## **II. HISTORY OF ENVIRONMENTAL INDICATOR EVALUATIONS AT THE FACILITY AND REFERENCE DOCUMENTS**

This particular evaluation is the first evaluation for the Gaston Copper site with regard to  
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Human Exposures (CA 725) and Groundwater Releases Controlled (CA 750). The site was not included in the original 2005 Government Performance and Results Act (GPRA) RCRA Cleanup Baseline. However, the site was subsequently added to the 2008 GPRA Baseline. An evaluation of Remedy Selected (CA 400) was completed April 2004.

### III. FACILITY SUMMARY

Gaston Copper formerly operated a secondary copper smelting facility located south of Gaston, South Carolina in Lexington County. The site was used for agricultural purposes until 1976 when Nassau Recycling Corporation purchased the land and built a facility to recycle copper and other metals from reclaimed telephone equipment, wire and cable scrap, and other metallic scrap. The scrap material was processed by shearing, stripping, chopping, and separation. The scrap material was also processed through a series of furnaces and electrolytic solutions to form copper rods. Gaston Copper Recycling Corporation purchased the facility in September 1990 and operated the facility for copper smelting until January 1996. During the early 2000s the facility ceased all operations.

In 1988, EPA conducted a site inspection and subsequently issued a RCRA Facility Assessment (RFA) in January 1989 that identified solid waste management units and areas of concern at the facility. A second site inspection was conducted in July 1995 and a final RFA was issued in August 1996. EPA issued a 3008(h) order in September 1995 requiring investigation and corrective action for units identified in the RFA.

Releases to soil, sediment, surface water and groundwater from facility operations have occurred and primarily consist of metals contamination. Final corrective actions for all units and media were proposed and approved in the Corrective Measures Study (Aug 2003, rev. Sept 2003, rev. Nov 2003). A summary of final remedial actions proposed for specific areas or media are listed below.

**Tank House** – Contaminated soil and concrete were excavated from the basement of the Tank House where building structures allowed. Following excavation, the Tank House was backfilled with clean soil and capped with concrete. Long-term maintenance of the cap is required to minimize continued releases to groundwater and reduce human exposures. Remediation of contaminated groundwater beneath and downgradient of the Tank House includes removal and treatment in the on-site wastewater treatment facility. Long term groundwater monitoring is required for the unit.

**Contaminated Soils** – A site-wide soil sampling was conducted during the RCRA Facility Investigation. The soil data was evaluated in a Human Health and Ecological Risk Assessment, which assumed uncovered soil and divided the site into 10-acre domains for industrial exposure and ½ acre domains for future residential exposure. Contaminated soils in unpaved areas were excavated and disposed of off-site. Existing concrete will be maintained across the site in areas where contamination remains. Land use controls will be used to inspect and maintain the concrete as a cap.

**Northeast and Southeast Landfills** – Groundwater downgradient of the Northeast Landfill is contaminated with low levels of 1,1-dichloroethene. Monitored natural attenuation has been proposed

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for this unit. Long term monitoring is in place to determine the effectiveness of this remedy. Groundwater monitoring is also in place for the Southeast Landfill for post closure care.

Site-Wide Groundwater – A detection groundwater monitoring system is in place at the perimeter of the site to monitor groundwater at the site boundaries.

Fallaws Pond – Remediation of contamination in sediments of Fallaws Pond is proposed through natural sedimentation. Monitoring of copper contamination in sediments and fish tissue will be used to assess the effectiveness of the remedy.

Land use controls and restrictive covenants are required for all areas of the site where contamination remains. These include, but are not limited to, a notice to the property deed, restrictions on the installation of drinking and irrigation wells, inspection and maintenance of capped and concrete covered areas of contamination, and requirements to notify the Department if there are any changes to land use in areas of contamination.

#### **IV. CONCLUSION FOR CA725 and CA750**

This evaluation for Event Codes 725 and 750 find that human exposures and groundwater releases are controlled.

#### **V. SUMMARY OF FOLLOW-UP ACTIONS**

A Final Decision and Response to Comments (FDRTC) was issued on April 8, 2004 for site-wide corrective action. Subsequently, a change in the approved remedy for groundwater at the Tank House was required. The proposed change for remediation of the Tank House groundwater contaminant plume was provided in the April 2004 Corrective Measures Implementation Workplan (rev. Aug 2004, rev April 2005) and public noticed in June 2006. The facility is currently conducting site-wide corrective action under EPA Administrative Order 94-09-R (3008(h) USEPA 1995) and SC DHEC Consent Agreement Order 04-03-HW for implementation of land use controls and long-term groundwater monitoring at the site.

Attachment: CA725: Current Human Exposures Under Control  
CA 750: Groundwater Releases Under Control

cc: Gerald Shealy, Central Midlands EQC  
John Johnston, EPA Region 4  
Alan Newman, EPA Region 4  
Greg McKibben, Southwire

**DOCUMENTATION OF ENVIRONMENTAL INDICATOR DETERMINATION**

Interim Final 2/5/99

**RCRA Corrective Action  
Environmental Indicator (EI) RCRIS code (CA725)  
Current Human Exposures Under Control  
Current Groundwater Releases Under Control**

**Facility Name:** Gaston Copper  
**Facility Address:** Gaston, South Carolina  
**Facility EPA ID #:** SCD 001 368 075

1. Has **all** available relevant/significant information on known and reasonably suspected releases to soil, groundwater, surface water/sediments, and air, subject to RCRA Corrective Action (e.g., from Solid Waste Management Units (SWMU), Regulated Units (RU), and Areas of Concern (AOC)), been **considered** in this EI determination?

☒ **X** If yes - check here and continue with #2 below.

☐ If no - re-evaluate existing data, or

☐ If data are not available skip to #6 and enter "IN" (more information needed) status code.

**BACKGROUND**

**Definition of Environmental Indicators (for the RCRA Corrective Action)**

Environmental Indicators (EI) are measures being used by the RCRA Corrective Action program to go beyond programmatic activity measures (e.g., reports received and approved, etc.) to track changes in the quality of the environment. The two EI developed to-date indicate the quality of the environment in relation to current human exposures to contamination and the migration of contaminated groundwater. An EI for non-human (ecological) receptors is intended to be developed in the future.

**Definition of "Current Human Exposures Under Control" EI**

A positive "Current Human Exposures Under Control" EI determination ("YE" status code) indicates that there are no "unacceptable" human exposures to "contamination" (i.e., contaminants in concentrations in excess of appropriate risk-based levels) that can be reasonably expected under current land- and groundwater-use conditions (for all "contamination" subject to RCRA corrective action at or from the identified facility (i.e., site-wide)).

### Relationship of EI to Final Remedies

While Final remedies remain the long-term objective of the RCRA Corrective Action program the EI are near-term objectives which are currently being used as Program measures for the Government Performance and Results Act of 1993, GPRA). The “Current Human Exposures Under Control” EI are for reasonably expected human exposures under current land- and groundwater-use conditions ONLY, and do not consider potential future land- or groundwater-use conditions or ecological receptors. The RCRA Corrective Action program’s overall mission to protect human health and the environment requires that Final remedies address these issues (i.e., potential future human exposure scenarios, future land and groundwater uses, and ecological receptors).

### **Duration / Applicability of EI Determinations**

El Determinations status codes should remain in RCRIS national database ONLY as long as they remain true (i.e., RCRIS status codes must be changed when the regulatory authorities become aware of contrary information).

2. Are groundwater, soil, surface water, sediments, or air **media** known or reasonably suspected to be “**contaminated**”<sup>1</sup> above appropriately protective risk-based “levels” (applicable promulgated standards, as well as other appropriate standards, guidelines, guidance, or criteria) from releases subject to RCRA Corrective Action (from SWMUs, RUs or AOCs)?

	<u>Yes</u>	<u>No</u>	<u>Rationale / Key Contaminants</u>
Groundwater	X		<u>see below</u>
Air (indoors) <sup>2</sup>		X	<u></u>
Surface Soil (e.g., <2 ft)	X		<u>see below</u>
Surface Water	X		<u>see below</u>
Sediment	X		<u>see below</u>
Subsurf. Soil (e.g., >2 ft)	X		<u>see below</u>
Air (outdoors)		X	<u></u>

\_\_\_\_\_ If no (for all media) - skip to #6, and enter "YE," status code after providing or citing appropriate "levels," and referencing sufficient supporting documentation demonstrating that these "levels" are not exceeded.

  X   If yes (for any media) - continue after identifying key contaminants in each “contaminated” medium, citing appropriate “levels” (or provide an explanation for the determination that the medium could pose an unacceptable risk), and referencing supporting documentation.

If unknown (for any media) - skip to #6 and enter "IN" status code.

Rationale and Reference(s):

As a result of electrolytic operations at the site, groundwater is contaminated above maximum concentration levels (MCLs) and preliminary remedial goals (PRGs), where no MCL is available. Groundwater contamination primarily includes copper and nickel in the area downgradient of the former Tank House. The source of contamination has been excavated and remaining contamination was capped. Corrective action for contaminated groundwater sourced by the Tank House includes removal of contaminated groundwater followed by treatment using the on-site wastewater treatment facility. Based on groundwater investigations, no off-site groundwater contamination was identified. 1,1-dichloroethene has been detected in groundwater downgradient of the Northeast Storage Area (Industrial Waste Landfill). Long term groundwater monitoring is in place for this unit to evaluate monitored natural attenuation as a final corrective action.

Soil contamination across the site consists of metals such as antimony, arsenic, barium, cadmium, chromium, copper, lead, nickel, mercury, selenium, thallium, and zinc in surface and subsurface soils. Soil was excavated and removed for off-site disposal in unpaved areas where contamination exceeded allowable human and ecological risk. Remaining areas of the site where soil contamination exceeded allowable risk will be maintained under existing concrete. Land use controls for the site include restrictive covenants to prevent residential development and maintenance of the concrete cap to reduce human exposure.

Fallows Pond is located downgradient of the NPDES discharge for the site. Metals such as cadmium, copper, lead, zinc and mercury in addition to PCBs have been detected in the pond. Fish tissue analyses and macroinvertebrate studies have also been completed for Fallows Pond through the NPDES program. Remediation of contamination in sediments of Fallows Pond is proposed through natural sedimentation. Monitoring of copper contamination in sediments and fish tissue will be used to assess the effectiveness of the remedy.

Land use controls and restrictive covenants are required for all areas of the site where contamination remains. These include, but are not limited to, a notice to the property deed, restrictions on the installation of drinking and irrigation wells, inspection and maintenance of capped and concrete covered areas of contamination, and requirements to notify the Department if there are any changes to land use in areas of contamination.

Footnotes:

<sup>1</sup> "Contamination" and "contaminated" describes media containing contaminants (in any form, NAPL and/or dissolved, vapors, or solids, that are subject to RCRA) in concentrations in excess of appropriately protective risk-based "levels" (for the media, that identify risks within the acceptable risk range).

<sup>2</sup> Recent evidence (from the Colorado Dept. of Public Health and Environment, and others) suggest that unacceptable indoor air concentrations are more common in structures above groundwater with volatile contaminants than previously believed. This is a rapidly developing field and reviewers are encouraged to look to the latest guidance for the appropriate methods

and scale of demonstration necessary to be reasonably certain that indoor air (in structures located above (and adjacent to) groundwater with volatile contaminants) does not present unacceptable risks.

3. Are there **complete pathways** between “contamination” and human receptors such that exposures can be reasonably expected under the current (land- and groundwater-use) conditions?

Summary Exposure Pathway Evaluation Table  
Potential **Human Receptors** (Under Current Conditions)

<b>“Contaminated” Media”</b>	Residents	Workers	Day-Care	Construction	Trespassers	Recreation	Food <sup>3</sup>
Groundwater	no	no	no	no	no	no	no
Air (indoors)							
Soil (surface, e.g., <2 ft)	no	no	no	no	no	no	no
Surface Water	no	no	no	no	no	no	no
Sediment	no	no	no	no	no	no	no
Soil (subsurface e.g., >2 ft)	no	no	no	no	no	no	no
Air (outdoors)							

Instructions for Summary Exposure Pathway Evaluation Table:

1. Strike-out specific Media including Human Receptors’ spaces for Media which are not “contaminated”) as identified in #2 above.
2. enter “yes” or “no” for potential “completeness” under each “Contaminated” Media -- Human Receptor combination (Pathway).

Note: In order to focus the evaluation to the most probable combinations some potential “Contaminated” Media - Human Receptor combinations (Pathways) do not have check spaces (“\_\_\_”). While these combinations may not be probable in most situations they may be possible in some settings and should be added as necessary.

  X   If no (pathways are not complete for any contaminated media-receptor combination) - skip to #6, and enter “YE” status code, after explaining and/or referencing condition(s) in-place, whether natural or man-made, preventing a complete exposure pathway from each contaminated medium (e.g., use optional Pathway Evaluation Work Sheet to analyze major pathways).

       If yes (pathways are complete for any “Contaminated” Media - Human Receptor combination) - continue after providing supporting explanation.

       If unknown (for any “Contaminated” Media - Human Receptor combination) - skip to #6 and enter “IN” status code

Rationale and Reference(s):

Soil data collected across the site indicates that concentrations of site related contaminants exceed residential and industrial risk based standards.

<sup>3</sup> Indirect Pathway/Receptor (e.g., vegetables, fruits, crops, meat and dairy products, fish, shellfish, etc.)

4. Can the **exposures** from any of the complete pathways identified in #3 be reasonably expected to be **"significant"**<sup>4</sup> (i.e., potentially "unacceptable" because exposures can be reasonably expected to be: 1) greater in magnitude (intensity, frequency and/or duration) than assumed in the derivation of the acceptable "levels" (used to identify the "contamination"); or 2) the combination of exposure magnitude (perhaps even though low) and contaminant concentrations (which may be substantially above the acceptable "levels") could result in greater than acceptable risks)?

\_\_\_\_\_ If no (exposures can not be reasonably expected to be significant (i.e., potentially "unacceptable") for any complete exposure pathway) - skip to #6 and enter "YE" status code after explaining and/or referencing documentation justifying why the exposures (from each of the complete pathways) to "contamination" (identified in #3) are not expected to be "significant."

\_\_\_\_\_ If yes (exposures could be reasonably expected to be "significant" (i.e., potentially "unacceptable") for any complete exposure pathway) - continue after providing a description (of each potentially "unacceptable" exposure pathway) and explaining and/or referencing documentation justifying why the exposures (from each of the remaining complete pathways) to "contamination" (identified in #3) are not expected to be "significant."

\_\_\_\_\_ If unknown (for any complete pathway) - skip to #6 and enter "IN" status code

Rationale and Reference(s) :

<sup>4</sup> If there is any question on whether the identified exposures are "significant" (i.e., potentially "unacceptable") consult a human health Risk Assessment specialist with appropriate education, training and experience.

5. Can the **"significant" exposures** (identified in #4) be shown to be within **acceptable** limits?

\_\_\_\_\_ If yes (all "significant" exposures have been shown to be within acceptable limits) - continue and enter "YE" after summarizing and referencing documentation justifying why all "significant" exposures to "contamination" are within acceptable limits (e.g., a site-specific Human Health Risk Assessment).



\_\_\_\_\_ If no (there are current exposures that can be reasonably expected to be "unacceptable")- continue and enter "NO" status code after providing a description of each potentially "unacceptable" exposure.

\_\_\_\_\_ If unknown (for any potentially "unacceptable" exposure) - continue and enter "IN" status code

6. Check the appropriate RCRIS status codes for the Current Human Exposures Under Control EI event code (CA725), and obtain Supervisor (or appropriate Manager) signature and date on the EI determination below (and attach appropriate supporting documentation as well as a map of the facility):

  X   YE - Yes, "Current Human Exposures Under Control" has been verified. Based on a review of the information contained in this EI Determination, "Current Human Exposures" are expected to be "Under Control" at the Gaston Copper facility, EPA ID # 001 368 075, located in Gaston, South Carolina under current and reasonably expected conditions. This determination will be re-evaluated when the Agency/State becomes aware of significant changes at the facility.

\_\_\_\_\_ NO - "Current Human Exposures" are NOT "Under Control."

\_\_\_\_\_ IN - More information is needed to make a determination.

Completed by: Cynde Devlin  
Cynde L. Devlin  
Hydrogeologist

Date: 7-26-07

Supervisor: Jack Gelting  
Jack Gelting, P.G., Manager  
RCRA Hazardous Waste Section  
South Carolina Department of Health and Environmental Control

Date: 7/27/07

Locations where References may be found:

1. RCRA Facility Investigation, dated June 2001
2. RFI Data Report, dated July 2002, rev May 2003
3. Corrective Measures Study, dated Aug 2003, rev Sept 2003, rev Nov 2003

Contact telephone and e-mail numbers:

Cynde Devlin  
803-896-4020  
devlincl@dhec.sc.gov

## DOCUMENTATION OF ENVIRONMENTAL INDICATOR DETERMINATION

Interim Final 2/5/99

### RCRA Corrective Action Environmental Indicator (EI) RCRIS code (CA750) Migration of Contaminated Groundwater Under Control

Facility Name: Gaston Copper  
Facility Address: Gaston, SC Lexington County  
Facility EPA ID #: SCD 001 368 075

1. Has **all** available relevant/significant information on known and reasonably suspected releases to the groundwater media, subject to RCRA Corrective Action (e.g., from Solid Waste Management Units (SWMU), Regulated Units (RU), and Areas of Concern (AOC)), been **considered** in this EI determination?

☒ **X** If yes - check here and continue with #2 below.

☐ If no - re-evaluate existing data, or

☐ if data are not available, skip to #8 and enter IN (more information needed) status code.

### **BACKGROUND**

#### **Definition of Environmental Indicators (for the RCRA Corrective Action)**

Environmental Indicators (EI) are measures being used by the RCRA Corrective Action program to go beyond programmatic activity measures (e.g., reports received and approved, etc.) to track changes in the quality of the environment. The two EI developed to-date indicate the quality of the environment in relation to current human exposures to contamination and the migration of contaminated groundwater. An EI for non-human (ecological) receptors is intended to be developed in the future.

#### **Definition of Migration of Contaminated Groundwater Under Control EI**

A positive Migration of Contaminated Groundwater Under Control EI determination (YE status code) indicates that the migration of contaminated groundwater has stabilized, and that monitoring will be conducted to confirm that contaminated groundwater remains within the original area of contaminated groundwater (for all groundwater contamination subject to RCRA corrective action at or from the identified facility (i.e., site-wide)).

#### **Relationship of EI to Final Remedies**

While Final remedies remain the long-term objective of the RCRA Corrective Action program the EI are near-term objectives which are currently being used as Program measures for the Government Performance and Results Act of 1993, GPRA). The Migration of Contaminated Groundwater Under

Control EI pertains ONLY to the physical migration (i.e., further spread) of contaminated ground water and contaminants within groundwater (e.g., non-aqueous phase liquids or NAPLs). Achieving this EI does not substitute for achieving other stabilization or final remedy requirements and expectations associated with sources of contamination and the need to restore, wherever practicable, contaminated groundwater to be suitable for its designated current and future uses.

#### **Duration / Applicability of EI Determinations**

EI Determinations status codes should remain in RCRIS national database ONLY as long as they remain true (i.e., RCRIS status codes must be changed when the regulatory authorities become aware of contrary information).

2. Is **groundwater** known or reasonably suspected to be **contaminated**<sup>1</sup> above appropriately protective levels (i.e., applicable promulgated standards, as well as other appropriate standards, guidelines, guidance, or criteria) from releases subject to RCRA Corrective Action, anywhere at, or from, the facility?

☒ **X** If yes - continue after identifying key contaminants, citing appropriate levels, and referencing supporting documentation.

☐ If no - skip to #8 and enter YE status code, after citing appropriate Alevels,≡ and referencing supporting documentation to demonstrate that groundwater is not contaminated.

☐ If unknown - skip to #8 and enter IN status code.

#### **Rationale and Reference(s):**

As a result of electrolytic operations at the site, groundwater is contaminated above maximum concentration levels (MCLs) and preliminary remedial goals (PRGs), where no MCL is available. Groundwater contamination primarily includes copper and nickel in the area downgradient of the former Tank House. Monitoring well MW-58 that is located in the center of the plume was reported to contain total copper at 490 mg/l and total nickel at 230 mg/l in November 2006. The source of contamination has been excavated and remaining contamination was capped. Corrective action for contaminated groundwater sourced by the Tank House includes removal of contaminated groundwater followed by treatment using the on-site wastewater treatment facility. Based on groundwater investigations, no off-site groundwater contamination was identified. 1,1-dichloroethene has been detected in groundwater downgradient of the Northeast Storage Area (Industrial Waste Landfill). Long term groundwater monitoring is in place to evaluate monitored natural attenuation as a final corrective action.

Land use controls and restrictive covenants are required for all areas of the site where contamination remains. These include, but are not limited to, a notice to the property deed, restrictions on the installation of drinking and irrigation wells, inspection and maintenance of

capped and concrete covered areas of contamination, and requirements to notify the Department if there are any changes to land use in areas of contamination.

Footnotes:

<sup>1</sup>"Contamination" and "contaminated" describes media containing contaminants (in any form, NAPL and/or dissolved, vapors, or solids, that are subject to RCRA) in concentrations in excess of appropriate levels (appropriate for the protection of the groundwater resource and its beneficial uses).

3. Has the **migration** of contaminated groundwater **stabilized** (such that contaminated groundwater is expected to remain within existing area of contaminated groundwater<sup>2</sup> as defined by the monitoring locations designated at the time of this determination)?

  X   If yes - continue, after presenting or referencing the physical evidence (e.g., groundwater sampling/measurement/migration barrier data) and rationale why contaminated groundwater is expected to remain within the (horizontal or vertical) dimensions of the existing area of groundwater contamination<sup>2</sup>).

       If no (contaminated groundwater is observed or expected to migrate beyond the designated locations defining the existing area of groundwater contamination<sup>2</sup>) - skip to #8 and enter NO status code, after providing an explanation.

       If unknown - skip to #8 and enter IN status code.

Rationale and Reference(s):

A pump and treat system was installed for contaminated groundwater downgradient of the former Tank House in November 2004. The system consists of groundwater recovery wells and effectiveness monitoring wells. Based on groundwater investigations, no off-site groundwater contamination was identified.

<sup>2</sup> "existing area of contaminated groundwater" is an area (with horizontal and vertical dimensions) that has been verifiably demonstrated to contain all relevant groundwater contamination for this determination, and is defined by designated (monitoring) locations proximate to the outer perimeter of "contamination" that can and will be sampled/tested in the future to physically verify that all "contaminated" groundwater remains within this area, and that the further migration of contaminated groundwater is not occurring. Reasonable allowances in the proximity of the monitoring locations are permissible to incorporate formal remedy decisions (i.e., including public participation) allowing a limited area for natural attenuation.

4. Does contaminated groundwater **discharge** into **surface water** bodies?

       If yes - continue after identifying potentially affected surface water bodies.

X   If no - skip to #7 (and enter a YE status code in #8, if #7 = yes) after providing an explanation and/or referencing documentation supporting that groundwater contamination does not enter surface water bodies.

       If unknown - skip to #8 and enter IN status code.

Rationale and Reference(s):

5. Is the **discharge** of contaminated groundwater into surface water likely to be **insignificant** (i.e., the maximum concentration<sup>3</sup> of each contaminant discharging into surface water is less than 10 times their appropriate groundwater level, and there are no other conditions (e.g., the nature, and number, of discharging contaminants, or environmental setting), which significantly increase the potential for unacceptable impacts to surface water, sediments, or eco-systems at these concentrations)?

       If yes - skip to #7 (and enter YE status code in #8 if #7 = yes), after documenting: 1) the maximum known or reasonably suspected concentration<sup>3</sup> of key contaminants discharged above their groundwater level the value of the appropriate level(s), and if there is evidence that the concentrations are increasing; and 2) provide a statement of professional judgement/explanation (or reference documentation) supporting that the discharge of groundwater contaminants into the surface water is not anticipated to have unacceptable impacts to the receiving surface water, sediments, or eco-system.

       If no - (the discharge of contaminated groundwater into surface water is potentially significant) - continue after documenting: 1) the maximum known or reasonably suspected concentration<sup>3</sup> of each contaminant discharged above its groundwater level, the value of the appropriate level(s), and if there is evidence that the concentrations are increasing; and 2) for any contaminants discharging into surface water in concentrations<sup>3</sup> greater than 100 times their appropriate groundwater levels, the estimated total amount (mass in kg/yr) of each of these contaminants that are being discharged (loaded) into the surface water body (at the time of the determination), and identify if there is evidence that the amount of discharging contaminants is increasing.

       If unknown - enter IN status code in #8.

Rationale and Reference(s):

<sup>3</sup> As measured in groundwater prior to entry to the groundwater-surface water/sediment interaction (e.g., hyporheic) zone.

6. Can the **discharge** of contaminated groundwater into surface water be shown to be **currently acceptable** (i.e., not cause impacts to surface water, sediments or eco-systems that should not

be allowed to continue until a final remedy decision can be made and implemented<sup>4</sup>)?

\_\_\_\_\_ If yes - continue after either: 1) identifying the Final Remedy decision incorporating these conditions, or other site-specific criteria (developed for the protection of the site surface water, sediments, and eco-systems), and referencing supporting documentation demonstrating that these criteria are not exceeded by the discharging groundwater; OR 2) providing or referencing an interim-assessment,<sup>5</sup> appropriate to the potential for impact, that shows the discharge of groundwater contaminants into the surface water is (in the opinion of a trained specialists, including ecologist) adequately protective of receiving surface water, sediments, and eco-systems, until such time when a full assessment and final remedy decision can be made. Factors which should be considered in the interim-assessment (where appropriate to help identify the impact associated with discharging groundwater) include: surface water body size, flow, use/classification/habitats and contaminant loading limits, other sources of surface water/sediment contamination, surface water and sediment sample results and comparisons to available and appropriate surface water and sediment levels, as well as any other factors, such as effects on ecological receptors (e.g., via bio-assays/benthic surveys or site-specific ecological Risk Assessments), that the overseeing regulatory agency would deem appropriate for making the EI determination.

\_\_\_\_\_ If no - (the discharge of contaminated groundwater can not be shown to be **currently acceptable**) - skip to #8 and enter NO status code, after documenting the currently unacceptable impacts to the surface water body, sediments, and/or eco-systems.

\_\_\_\_\_ If unknown - skip to 8 and enter IN status code.

#### Rationale and Reference(s):

<sup>4</sup> Note, because areas of inflowing groundwater can be critical habitats (e.g., nurseries or thermal refugia) for many species, appropriate specialist (e.g., ecologist) should be included in management decisions that could eliminate these areas by significantly altering or reversing groundwater flow pathways near surface water bodies.

<sup>5</sup> The understanding of the impacts of contaminated groundwater discharges into surface water bodies is a rapidly developing field and reviewers are encouraged to look to the latest guidance for the appropriate methods and scale of demonstration to be reasonably certain that discharges are not causing currently unacceptable impacts to the surface waters, sediments or eco-systems.

7. Will groundwater **monitoring** / measurement data (and surface water/sediment/ecological data, as necessary) be collected in the future to verify that contaminated groundwater has remained

within the horizontal (or vertical, as necessary) dimensions of the existing area of contaminated groundwater?

☒ If yes - continue after providing or citing documentation for planned activities or future sampling/measurement events. Specifically identify the well/measurement locations which will be tested in the future to verify the expectation (identified in #3) that groundwater contamination will not be migrating horizontally (or vertically, as necessary) beyond the existing area of groundwater contamination.

☐ If no - enter NO status code in #8.

☐ If unknown - enter IN status code in #8.

Rationale and Reference(s):

The facility is currently conducting site-wide corrective action under EPA Administrative Order 94-09-R (3008(h) USEPA 1995) and SC DHEC Consent Agreement Order 04-03-HW for implementation of land use controls and long-term groundwater monitoring at the site.

8. Check the appropriate RCRIS status codes for the Migration of Contaminated Groundwater Under Control EI (event code CA750), and obtain Supervisor (or appropriate Manager) signature and date on the EI determination below (attach appropriate supporting documentation as well as a map of the facility).

☒ YE - Yes, Migration of Contaminated Groundwater Under Control has been verified. Based on a review of the information contained in this EI determination, it has been determined that the Migration of Contaminated Groundwater is Under Control at the Gaston Copper facility, EPA ID # SCD 001 368 075, located in Gaston, South Carolina. Specifically, this determination indicates that the migration of contaminated groundwater is under control, and that monitoring will be conducted to confirm that contaminated groundwater remains within the existing area of contaminated groundwater. This determination will be re-evaluated when the Agency becomes aware of significant changes at the facility.

☐ NO - Unacceptable migration of contaminated groundwater is observed or expected.

☐ IN - More information is needed to make a determination.

Completed by: Cynde Devlin Date: 7-26-07  
Cynde Devlin  
Hydrogeologist, SCDHEC

Supervisor: Jack Gelting Date: 7/27/07  
Jack Gelting, P.G., Manager  
RCRA Hazardous Waste Section  
South Carolina Department of Health and Environmental Control

Locations where References may be found:

1. RCRA Facility Investigation, dated June 2001
2. RFI Data Report, dated July 2002, rev May 2003
3. Corrective Measures Study, dated Aug 2003, rev Sept 2003, rev Nov 2003

Contact telephone and e-mail numbers:

Cynde Devlin  
(803) 896-4020  
devlincl@dhec.sc.gov